

What is claimed is:

1.

1 A cam for an archery bow, comprising:
2 a cam body providing guided entrainment of a bow string at least partially
3 about the cam body; and
4 at least one adjuster carried by the cam body for adjustment between at
5 least two positions, and when the adjuster is arranged in a first position the adjuster
6 engages a harness string of said bow string during at least a portion of the rotation of the
7 cam body for a full draw of the archery bow to define at least in part a first draw weight
8 and a first draw length of the bow, and when the adjuster is arranged in a second position
9 the adjuster engages the harness string during at least a portion of the rotation of the cam
10 body for a full draw of the archery bow to define at least in part a second draw weight and
11 a second draw length of the bow, wherein at least one of the draw lengths and draw
12 weights are different.

2.

1 The cam of claim 1 wherein the first draw weight is different from the
2 second draw weight.

3.

1 The cam of claim 1 wherein the first draw length is different from the
2 second draw length.

4.

1 The cam of claim 1 wherein the first draw weight is different from the
2 second draw weight, and the first draw length is different from the second draw length.

5.

1 The cam of claim 1 wherein when the adjuster is in the first position it
2 engages the harness string during at least a portion of the rotation of the cam body for a
3 full draw of the bow and a first amount of harness string is taken up to define the first
4 draw weight, and when the adjuster is in the second position it engages the harness string
5 during at least a portion of the rotation of the cam body for a full draw of the bow and the
6 first amount of harness string is taken up with less rotation of the cam body whereby the
7 bow has the same draw weight and a shorter draw length when the adjuster is in the
8 second position than when the adjuster is in the first position.

6.

1 The cam of claim 1 wherein when the adjuster is in the first position it
2 engages the harness string during at least a portion of the rotation of the cam body for a
3 full draw of the bow and a first amount of harness string is taken up to define the first
4 draw weight, and when the adjuster is in the second position it engages the harness string
5 during at least a portion of the rotation of the cam body for a full draw of the bow and a
6 second amount of harness string is taken up to define the second draw weight that is
7 different from the first draw weight, and wherein the cam body rotates the same amount
8 during a full draw of the bow when the adjuster is in either of the first and second
9 positions so that the bow has the same draw length when the adjuster is in either of its first
10 and second positions.

7.

1 The cam of claim 1 further comprising a stop carried by the cam body to
2 engage the harness string and prevent further drawing of the bow string, thereby providing
3 a limit to the draw length.

8.

1 The cam of claim 7 wherein the stop can be moved between at least two
2 positions and in at least one position the stop engages the harness string after the cam body
3 has rotated past a let-off point to provide a limit to the magnitude of the let-off from the
4 draw weight by between about 50 percent to 80 percent at a full draw of the bow.

9.

1 The cam of claim 1 wherein the cam body has a pair of tracks with a first
2 track lying in a first plane and a second track lying in a second plane laterally spaced from
3 the first plane, and wherein during at least a portion of a draw of the bow the first track
4 receives at least a portion of a draw string of the bow string and the second track receives
5 at least a portion of the draw string and at least a portion of the harness string.

10.

1 The cam of claim 9 wherein the cam body has a periphery defining at least
2 in part the first track and the second track is defined at least in part by the adjuster.

11.

1 A cam for an archery bow, comprising:
2 a cam body suitable for guided entrainment of a bow string at least partially
3 about the cam body; and
4 at least one adjuster carried by the cam body for adjustment between at
5 least two positions and when arranged in a first of said at least two positions, the adjuster
6 engages a harness string of said bow string during at least a portion of the rotation of the
7 cam body for a full draw of the archery bow and a first amount of the harness string is
8 taken up to define a first draw weight of the bow, and when arranged in a second of said at
9 least two positions, the adjuster engages the harness string during at least a portion of the
10 rotation of the cam body for a full draw of the archery bow and a second amount of the
11 harness string different from the first amount is taken up to define a second draw weight of
12 the bow that is different from said first draw weight.

12.

1 The cam of claim 11 wherein the adjuster can be moved to a third position
2 and when the adjuster is in said third position, the first amount of harness string is taken
3 up with less rotation of the cam body for a full draw of the archery bow than when the
4 adjuster is in said first position providing a shorter draw length for a full draw of the bow
5 in said third position than in said first position.

13.

1 The cam of claim 11 wherein the cam body rotates a similar amount for a
2 full draw of the bow when the adjuster is in either said first position or said second
3 position so that the draw length remains substantially constant when the adjuster is moved
4 between the first and second positions.

14.

1 The cam of claim 11 wherein in each of the first and second positions of the
2 adjuster the cam body rotates a different amount so that the draw length for a full draw of
3 the bow is different when the adjuster is in said first position than when the adjuster is in
4 its second position.

15.

1 The cam of claim 11 wherein the adjuster is adjustable between at least
2 three different positions on the cam body to take up at least three different amounts of the
3 harness string during a full draw of the archery bow to define at least three different draw
4 weights of the bow.

16.

1 The cam of claim 15 wherein the at least three different draw weights span
2 a range of approximately 35 pounds.

17.

1 The cam of claim 11 further comprising a stop carried by the cam body to
2 engage the harness string and prevent further drawing of the bow string, thereby providing
3 a limit to the draw length.

18.

1 The cam of claim 17 wherein the stop can be moved between at least two
2 positions and in at least one position the stop engages the harness string after the cam body
3 has rotated past a let-off point to provide a limit to the magnitude of the let-off from the
4 draw weight by between about 50 percent to 80 percent at a full draw of the bow.

19.

1 The cam of claim 11 wherein the cam body has a first adjustment array
2 providing for a plurality of positions in which the adjuster can be mounted on the body
3 with each position providing a different draw length of the archery bow, and when the
4 adjuster is in any of the positions associated with said first adjustment array the bow has
5 substantially the same draw weight.

20.

1 The cam of claim 19 which also comprises a second adjustment array
2 providing for a plurality of positions in which the adjuster can be mounted on the cam
3 body that are different from said plurality of positions associated with said first adjustment
4 array, with each position of the adjuster in the second adjustment array providing a
5 different draw length of the bow, and when the adjuster is in any of the positions of the
6 second adjustment array the bow has substantially the same draw weight.

21.

1 The cam of claim 20 wherein the draw weight achieved when the adjuster
2 is in one of the positions of the first adjustment array is different than the draw weight
3 achieved by when the adjuster is in one of the positions of the second adjustment array.

22.

1 The cam of claim 11 wherein the cam body has a pair of tracks with a first
2 track lying in a first plane and a second track lying in a second plane laterally spaced from
3 the first plane, and wherein during at least a portion of a draw of the bow the first track
4 receives at least a portion of a draw string of the bow string and the second track receives
5 at least a portion of the draw string and at least a portion of the harness string.

23.

1 The cam of claim 22 wherein the cam body has a periphery defining at least
2 in part the first track and the second track is defined at least in part by the adjuster.

24.

1 A cam for an archery bow, comprising:
2 a body providing for guided entrainment of a bow string at least partially
3 about the body; and
4 at least one adjuster carried by the body for adjustment between at least
5 two positions and when arranged in a first position the adjuster engages the harness string
6 during at least a portion of the rotation of the body for a full draw of the bow, and takes
7 up a first amount of the harness string to define at least in part a first draw length the bow,
8 and when arranged in a second position, the adjuster engages the harness string during at

9 least a portion of the rotation of the body for a full draw of the bow and takes up said first
10 amount of the harness string with less rotation of the cam than is required when the
11 adjuster is in the first position to define at least in part a second draw length of the bow
12 that is less than the first draw length.

25.

1 The cam of claim 24 wherein the adjuster may be carried by the body in a
2 third position and when the adjuster is arranged in the third position, the adjuster engages
3 the harness string during at least a portion of the rotation of the body and takes up a
4 second amount of the harness string different from said first amount to define a draw
5 weight of the bow, that is different than when the adjuster is in the first or second
6 positions.

26.

1 The cam of claim 24 which also comprises an axle passage in the cam body
2 having an axis about which the cam body rotates when the bow is drawn, and a post
3 carried by the cam body spaced from the axle passage are constructed for attachment of
4 one end of the harness string thereto, the adjuster being positioned closer to the post when
5 the adjuster is in the first position than when the adjuster is in the second position.

27.

1 The cam of claim 24 further comprising a stop carried by the body for
2 adjustment between at least two positions and arranged in one of said at least two positions
3 so that, during at least a portion of the rotation of the body, the stop engages the harness
4 string providing a positive stop to at least one of the first and second draw lengths.

28.

1 The cam of claim 24 wherein the cam body has a pair of tracks with a first
2 track lying in a first plane and a second track lying in a second plane laterally spaced from
3 the first plane, and wherein during at least a portion of a draw of the bow the first track
4 receives at least a portion of a draw string of the bow string and the second track receives
5 at least a portion of the draw string and at least a portion of the harness string.

29.

1 The cam of claim 28 wherein the cam body has a periphery defining at least
2 in part the first track and the second track is defined at least in part by the adjuster.

30.

1 An archery bow, comprising:
2 a riser;
3 a pair of limbs carried by the riser with each limb having a free end spaced
4 from the riser;
5 at least one cam having a body rotatably carried adjacent a free end of a
6 limb;
7 a bow string having a draw string entrained at least partially about the
8 body, and a harness string; and
9 at least one adjuster carried by the body for adjustment between at least two
10 positions, and when the adjuster is arranged in a first position the adjuster engages a
11 harness string of said bow string during at least a portion of the rotation of the body for a
12 full draw of the archery bow to define at least in part a first draw weight and a first draw
13 length of the bow, and when the adjuster is arranged in a second position the adjuster

14 engages the harness string during at least a portion of the rotation of the body for a full
15 draw of the archery bow to define at least in part a second draw weight and a second draw
16 length of the bow, wherein at least one of the draw lengths and draw weights are different.

31.

1 The archery bow of claim 30 wherein the first draw weight is different from
2 the second draw weight.

32.

1 The archery bow of claim 30 wherein the first draw length is different from
2 the second draw length.

33.

1 The archery bow of claim 30 wherein the first draw weight is different from
2 the second draw weight, and the first draw length is different from the second draw length.

34.

1 The archery bow of claim 30 wherein when the adjuster is in the first
2 position it engages the harness string during at least a portion of the rotation of the cam
3 body for a full draw of the bow and a first amount of harness string is taken up to define
4 the first draw weight, and when the adjuster is in the second position it engages the
5 harness string during at least a portion of the rotation of the cam body for a full draw of
6 the bow and the first amount of harness string is taken up with less rotation of the cam
7 body whereby the bow has the same draw weight and a shorter draw length when the
8 adjuster is in the second position than when the adjuster is in the first position.

35.

1 The archery bow of claim 30 wherein when the adjuster is in the first
2 position it engages the harness string during at least a portion of the rotation of the cam
3 body for a full draw of the bow and a first amount of harness string is taken up to define
4 the first draw weight, and when the adjuster is in the second position it engages the
5 harness string during at least a portion of the rotation of the cam body for a full draw of
6 the bow and a second amount of harness string is taken up to define the second draw
7 weight that is different from the first draw weight, and wherein the cam body rotates the
8 same amount during a full draw of the bow when the adjuster is in either of the first and
9 second positions so that the bow has the same draw length when the adjuster is in either of
10 its first and second positions.

36.

1 The archery bow of claim 30 further comprising a stop carried by the body
2 to engage the harness string and prevent further drawing of the bow string, thereby
3 providing a limit to the draw length.

37.

1 The archery bow of claim 36 wherein the stop can be moved between at
2 least two positions and in at least one position the stop engages the harness string after the
3 cam body has rotated past a let-off point to provide a limit to the magnitude of the let-off
4 from the draw weight by between about 50 percent to 80 percent at a full draw of the bow.

38.

1 A cam for an archery bow having a draw string and a harness string
2 comprising:
3 a cam body having a pair of tracks with a first track lying in a first plane
4 and a second track lying in a second plane laterally spaced from the first plane, and
5 wherein during at least a portion of a draw of the bow the first track receives at least a
6 portion of a draw string and the second track receives at least a portion of the draw string
7 and at least a portion of a harness string.

39.

1 The cam of claim 38 wherein the first and second planes are substantially
2 parallel and adjacent to one another.

40.

1 The cam of claim 38 wherein the first track is defined at least in part by a
2 groove formed in at least a portion of the periphery of the cam body and the second track
3 is defined at least in part by a member carried by the cam body.

41.

1 The cam of claim 40 wherein said member is adjustably carried by the cam
2 body permitting at least a portion of the second track to be moved relative to the cam
3 body.

42.

- 1 The cam of claim 41 wherein the second track remains substantially in the
2 second plane as the member is adjusted from one position to another on the cam body.

43.

- 1 The cam of claim 40 wherein the member can be mounted on the cam body
2 in at least two positions to vary draw weight of the draw string.

44.

- 1 The cam of claim 40 wherein the member can be mounted on the cam body
2 in at least two positions to vary the draw length of the draw string.

45.

- 1 The cam of claim 40 wherein the member can be mounted on the cam body
2 in at least two positions to vary both the draw weight and draw length of the draw string.